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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,362	10/16/2001	Edward R. Beadle	HAR62 001	3384

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EXAMINER

WILLIAMS, LAWRENCE B

ART UNIT PAPER NUMBER

2634

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

4

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/977,362	BEADLE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Lawrence B Williams	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. This application has been filed with informal drawings, which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

### ***Specification***

2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

3. Claim 1 is objected to because of the following informalities:
  - a.) Examiner suggests applicant remove "first" in step (g).
  - b.) Examiner suggests applicant remove "second" and replace in step (j).
4. Claim 23 is objected to because of the following informalities: Examiner suggests applicant replace "against" in line 10 with "with".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph, because the best mode contemplated by the inventor has not been disclosed. The step (d) is out of chronological order when compared with the remaining steps of the method. Applicant's specification, pg. 9, line 15-pg. 11, line 9, and the submitted figure disclose steps (e), (f), and (g) being required before to use the imaginary component of the received signal to "provide a received power signal having a magnitude related to the power of the received signal.

7. Claim 15 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Examiner is unable to find adequate support in applicant's disclosure for the limitation of step (e); pg. 10, line 16-pg. 11, line 9. Applicant disclosure contains no mention of a "sampling" process or procedure.

8. Claim 15 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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9. Claims 19-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant fails to disclose “sampling means”. The disclosure makes no reference to the claimed “**sampling means**”.

10. Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. . There is no support in the disclosure for the limitation “producing the signal power estimate by combining a demodulated bit sequence of the communication signal component **against samples of a delay discriminator** output derived from the received signal taken at an **optimal sample time** to thereby produce a first signal.” Applicant’ disclosure contains no mention of “samples”, “delay discriminator” or an “optimal sample time” as contained in the above mentioned limitation of claim 23.

***Claim Rejections - 35 USC § 112***

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

12. Claims 16 and 18 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

The claim(s) is narrative in form and replete with indefinite and functional or operational language. The structure, which goes to make up the device, must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited.

***Claim Rejections - 35 USC § 102***

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. Claims 9-14, 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al. (US 2002/0101832).

(1) With regard to claim 9, Chen et al. discloses a method for estimating the signal to noise ratio at a receiver of a transmitted signal having a communication signal component and a noise signal component comprising the steps of: (a) receiving the transmitted signal having a real and an imaginary component ([0023]); (b) determining the power of the received signal to provide a first signal related to the power of the received signal ([0007]); (c) determining the power of the communication component of the received signal including the step of combining the received signal with a delayed conjugate of the received signal to thereby provide a second signal related to the power of the communication component of the received signal, and (d)

combining the first and second signals to thereby provide a third signal related to an estimate of the signal to noise ratio of the transmitted signal (abstract; [0057-0060]).

(2) With regard to claim 10, though Chen et al. does not explicitly disclose wherein the communication signal component is of the non-linear modulation type, he does teach orthogonal modulation symbols ([0010]). It is well known in the art that that orthogonal modulation is a non-linear modulation scheme.

(3) With regard to claim 11, again Chen et al. does not explicitly teach the modulation being continuous phase frequency shift keying, it is well known that CPFSK is a non-linear modulation type. Therefore, his disclosure of orthogonal modulation (non-linear) would inherently include CPFSK.

(4) With regard to claims 12-14, the communication signal component type would be merely a design choice. IS-55 and CDMA 200 incorporate multiple modulation schemes including the ones referenced in applicant's claims 11-14. It would be merely a design choice to incorporate the different advantages of each.

(5) With regard to claim 16, Chen et al. discloses a method for estimating the signal to noise ratio of a received signal having a real and an imaginary component of both a communication signal component and a noise signal component, where the power in the received signal is compared to the power in the communication component, the improvement including the steps of: (a) producing a complex conjugate of the received signal to provide a conjugate signal; (b) delaying the conjugate signal by a predetermined length of time; and (c) combining in a predetermined manner the delayed conjugate signal with the received signal to thereby produce a combined signal (abstract; [0057-0060]).

(6) With regard to claim 17, Chen et al. also discloses the estimating method including the further step of eliminating the real component of the combined signal to thereby provide a communication power signal representative of the power in the communication component of the received signal ([0023]).

(7) With regard to claim 18, Chen et al. discloses a method for estimating the signal to noise ratio of a received signal having a real and an imaginary component of both a communication signal component and a noise signal component, where the power in the received signal is compared to the power in the communication component, the improvement including the step of eliminating the real component of the combination of the received signal and the delayed conjugate of the received signal ([0023]; [0075-0060]).

### ***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Scott et al. discloses in US Patent 5,282,228 Timing and Automatic Frequency Control of Digital Receiver Using the Cyclic Properties of Non-Linear Operation.

b.) Bruckert et al. discloses in US Patent 5,640,431 Method and Apparatus for Offset Frequency Estimation for a Coherent Receiver.

c.) Lee et al. discloses in US 2002/0021749 A1 Method and Apparatus for Direct Sequence Spread Spectrum Receiver Using an Adaptive Channel Estimator.

d.) Shen discloses in US Patent 6,717,976 B1 Method and Apparatus For Signal to Noise Power Ratio Estimation in a Multi Sub-Channel CDMA Receiver.



e.) Popovic discloses in US Patent 6,292,519 B1 Correction of Signal-to-Interference Ratio Measurements.

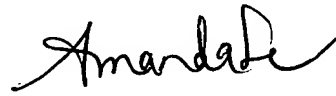
16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw  
January 9, 2005

  
AMANDA T. LE  
PRIMARY EXAMINER